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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,137	06/26/2003	Soheil Shams	SSI001	6733
909	7590	07/14/2006	EXAMINER	
PILLSBURY WINTHROP SHAW PITTMAN, LLP			BRUSCA, JOHN S	
P.O. BOX 10500			ART UNIT	PAPER NUMBER
MCLEAN, VA 22102			1631	

DATE MAILED: 07/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/609,137	SHAMS, SOHEIL	
	<b>Examiner</b>	<b>Art Unit</b>	
	John S. Brusca	1631	

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 09 May 2006.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-81 is/are pending in the application.
- 4a) Of the above claim(s) 5,6,24,25,43,44,60,68 and 76 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-4,9-23,28-42,47-59,62-67,70-75 and 78-81 is/are rejected.
- 7) Claim(s) 7,8,26,27,45,46,61,69 and 77 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 09 May 2006 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

1. This application has been reassigned to a new examiner.

### ***Election/Restrictions***

2. Applicant's election of species B in the reply filed on 09 May 2006 is acknowledged.

Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

3. Applicant's election with traverse of species D, F, and H in the reply filed on 09 May 2006 is acknowledged. The traversal is on the ground(s) that species D, F, and H are not specifically claimed. This is found persuasive and species C, D, E, F, G, and H are rejoined.

The requirement is still deemed proper and is therefore made FINAL.

4. Claims 5, 6, 24, 25, 43, 44, 60, 68, and 76 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made without traverse in the reply filed on 09 May 2006.

### ***Drawings***

5. The drawings were received on 09 May 2006. These drawings are acceptable.

### ***Specification***

6. The objection to the specification for lack of compliance with the sequence rules in the Office action mailed 09 December 2005 is withdrawn in view of the amendment to figure 1 filed 09 May 2006.

***Claim Objections***

7. Claim 81 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 81 depends on itself. For the purpose of examination the claim has been assumed to depend from claim 74

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 37, 55, 70-73, and 81 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claims 37, 55, and 70-73, recite the limitations “an apparatus as set forth in claim 11”, “a computer program product as set forth in claim 1”, “an apparatus as set forth in claim 58”, “an apparatus as set forth in claim 62”, “an apparatus as set forth in claim 6”, and “an apparatus as set forth in claim 64”, respectively. There is insufficient antecedent basis for this limitation in the claims. The rejection would be overcome by amending claims 37, 55, and 70-73 to depend from (directly or indirectly) from independent claims 20, 39, and 66, respectively.

For the purpose of examination, the claims have been assumed to incorporate the suggested amendments.

*Claim Rejections - 35 USC § 102*

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-4, 9-17, 58, 59, and 62-65 are rejected under 35 U.S.C. 102(b) as being anticipated by Caron et al.

The claims are drawn to a method of aligning gene expression data of exons to a chromosomal map thereby creating an expression map. In some embodiments sets of coexpressed genes are identified, a plurality of expression data from different conditions are mapped to chromosomal positions, and an entire chromosome is mapped.

Caron et al. details results from a complete human transcriptome map. Caron et al. shows that SAGE expression data was used on page 1289 (which is derived from processed cDNA transcripts, known in the art to consist of exons, as shown in page 3 of the supplemental material). Caron et al. shows a portion of the complete transcriptome map in figure 1 which shows an expression map of human chromosome 11 in which the expression profiles of eight different cell types are indicated. Caron et al. notes the presence of regions of increased gene expression (termed RIDGEs) on page 1290-1292.

*Claim Rejections - 35 USC § 103*

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 1, 2, 18-23, 28-42, 47-57, 66, 67, 70-75, and 78-81 rejected under 35 U.S.C. 103(a) as being unpatentable over Caron et al. in view of Kanehisa et al.

The claims are drawn to a method of aligning gene expression data of exons to a chromosomal map thereby creating an expression map. In some embodiments sets of coexpressed genes are identified, a plurality of expression data from different conditions are mapped to chromosomal positions, and an entire chromosome is mapped. In some embodiments the claims are drawn to computers and programs that execute the method. In some embodiments the maps are of different genomes.

Caron et al. details results from a complete human transcriptome map. Caron et al. shows that SAGE expression data was used on page 1289 (which is derived from processed cDNA transcripts, known in the art to consist of exons, as shown in page 3 of the supplemental material). Caron et al. shows a portion of the complete transcriptome map in figure 1 which shows an expression map of human chromosome 11 in which the expression profiles of eight different cell types are indicated. Caron et al. notes the presence of regions of increased gene expression (termed RIDGEs) on page 1290-1292. Caron details use of databases and algorithms to generate and analyze the data of their method of making a transcriptome map throughout the supplemental material pages 1-11. Caron et al. does not explicitly show computers and programs that execute their method. Caron et al. does not show comparison of expression profiles of different genomes.

Kanehisa et al. describe a knowledge base termed KEGG in the abstract and throughout that comprises genomic information including genomic maps and gene expression profiles.

Kanehisa et al. states on page 27 that their knowledge base uses computerized tools and software to facilitate the analysis depicted in figure 1. Kanehisa et al. shows on page 28 that their system comprises gene expression profiles that allow the user to detect co-regulated genes that are clustered on a chromosome. Table 1 shows that KEGG has 23 complete genome maps and four sets of expression maps. Kanehisa et al. shows comparison of orthologs and genome-genome comparisons on page 29.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of generating expression map comparisons of Caron et al. by use data of multiple genomes because Kanehisa et al. shows databases and methods of comparing data of multiple genomes to compare orthologs. It would have been further obvious to automate the procedures of Caron et al. because Caron et al. discusses use of programs and computer databases, Kanehisa et al. shows that similar collections of expression maps can be analyzed by computers and programs, and because automation of a manual activity is recognized as obvious, as noted in the MPEP at section 2144.04:

### III. AUTOMATING A MANUAL ACTIVITY

In re Venner, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958) (Appellant argued that claims to a permanent mold casting apparatus for molding trunk pistons were allowable over the prior art because the claimed invention combined “old permanent-mold structures together with a timer and solenoid which automatically actuates the known pressure valve system to release the inner core after a predetermined time has elapsed.” The court held that broadly providing an automatic or mechanical means to replace a manual activity which accomplished the same result is not sufficient to distinguish over the prior art.).

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***Allowable Subject Matter***

15. Claims 7, 8, 26, 27, 45, 46, 61, 69, and 77 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John S. Brusca whose telephone number is 571 272-0714. The examiner can normally be reached on M-F 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang can be reached on 571 272-0811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
John S. Brusca  
Primary Examiner  
Art Unit 1631

jsb